

## DOCUMENT RESUME

ED 307 463

CE 052 584

TITLE Small and Medium Scale Agribusiness Assessment. Peace Corps Information Collection & Exchange Reprint No. TR43.

INSTITUTION Peace Corps, Washington, DC. Information Collection and Exchange Div.

PUB DATE May 83

NOTE 91p.

PUB TYPE Guides - Non-Classroom Use (055)

EDRS PRICE MF01/PC04 Plus Postage.

DESCRIPTORS Adult Education; \*Agribusiness; Agricultural Education; Check Lists; \*Developing Nations; Economic Development; \*Farmers; \*Feasibility Studies; Foreign Countries; Guidelines; \*Needs Assessment; \*Planning; Voluntary Agencies; Volunteers

IDENTIFIERS Peace Corps

## ABSTRACT

This manual is intended for Peace Corps volunteer use as they assist small- and medium-scale farmers in feasibility assessment and business plan development for agribusiness. Part I discusses the role of the Peace Corps in agribusiness development. It defines agribusiness, outlines the significance of agribusiness in economic development, discusses the need for small- and medium-scale agribusiness development, and describes the role of the Peace Corps volunteer. Part I concludes with a discussion of the steps in an agribusiness prefeasibility analysis. A flow chart illustrates the steps and decision points and, where appropriate, refers to the chapters of the checklist (Part II) to use in completing the steps. A brief explanation of the steps is provided. Part II contains the checklist for agribusiness assessment. The checklist is a set of guidelines for completing an agribusiness assessment. It is set out in five chapters to provide for a structured report that can be read in logical sequence. Chapter subjects are introduction; the project plan; governmental considerations; project socioeconomic analysis; and project assessment of the following subsectors: (1) livestock; (2) fisheries; and (3) fruits and vegetables (including ornamental plants). Samples and forms are provided. (YLB)

\*\*\*\*\*

\* Reproductions supplied by EDRS are the best that can be made \*

\* from the original document. \*

\*\*\*\*\*

ED 307 463

U.S. DEPARTMENT OF EDUCATION  
Office of Educational Research and Improvement  
EDUCATIONAL RESOURCES INFORMATION  
CENTER (ERIC)

☒ This document has been reproduced as  
received from the person or organization  
originating it  
☐ Minor changes have been made to improve  
reproduction quality

• Points of view or opinions stated in this docu-  
ment do not necessarily represent official  
OERI position or policy

SMALL AND MEDIUM SCALE

AGRIBUSINESS ASSESSMENT

U.S. PEACE CORPS

May, 1983

Reprinted By:  
PEACE CORPS

Information Collection and Exchange  
April 1985  
TR45

BEST COPY AVAILABLE

CEOS 2.584

## TABLE OF CONTENTS

	PAGE
FOREWORD	I
PREFACE	II
 PART I. PEACE CORPS IN AGRIBUSINESS DEVELOPMENT	
Background	1
Agribusiness Defined	2
Agribusiness in Development	2
Small and Medium Scale Agribusiness	3
The Peace Corps Volunteer's Role	5
The Steps in Pre-feasibility Analysis	9
 PART II. CHECKLIST FOR AGRIBUSINESS ASSESSMENT	
Directions for using the checklist	1
Checklist for Agribusiness Assessment	3
Chapter I. Introduction	6
Chapter II. The Project Plan	7
Chapter III. Governmental Considerations	8
Chapter IV. Project Socioeconomic Analysis	10
Chapter V. Project Analysis of: (market, technical and financial)	
Livestock Projects	12
Fisheries Projects	26
Fruits, Vegetables and Ornamental Plant Projects	43

FOREWORD

The impetus for producing this manual came from ideas of public and private economic decision makers in the Caribbean Basin developing countries where Peace Corps has programs. They are acutely aware that small and medium scale agribusiness development is an essential task which nations must undertake on the road to development. They believe Peace Corps Volunteers can help with the crucial first step of determining where the resources for agribusiness can be directed most effectively. We have developed this manual to support this effort. In the final analysis however, it will be the determined and creative efforts of Peace Corps Volunteers and their host country counterparts which will be the real moving force in accomplishing this important task. Working hand in hand with the people in the host country communities we will make possible a brighter tomorrow.

Luis R. del Rio  
Director  
Inter-American Operations  
U.S. Peace Corps

## PREFACE

This manual was put together with the very able assistance of three internationally recognized experts in agribusiness. Dr. Ian Fraser, Commercial Livestock Specialist, Dr. Edward McLaughlin, Commercial Fruits and Vegetable Specialist, and Mr. Henry Clifford, Commercial Fisheries Specialist. Each has extensive experience in developing countries and has worked with Peace Corps Volunteers.

We have tried to keep the manual as practical as possible. We owe a special debt of gratitude to the Peace Corps Volunteers working in rural projects in Jamaica who participated in the pilot agribusiness program and gave us their valuable comments. I am confident that any editorial errors or omissions will be readily overcome by the ingenuity of Peace Corps Volunteers who rank among the most creative people working in development today.

Bill Gschwend  
Editor

PEACE CORPS MANUAL FOR AGRIBUSINESS PROJECT ASSESSMENT

BACKGROUND

In the course of Peace Corps work in the agricultural sector in developing countries, the desire of many rural people to move beyond subsistence level to a better economic situation is a constant reality.

The governments of most developing countries realize that their economic survival depends in large measure on the ability of their small and medium farmers to produce more than they consume and to place their surplus products on the market in sufficient quantity and at an affordable price. Most developing countries now have funds available to assist in financing farmers production and marketing programs.

There is no lack of ideas on what might be done. They range from new products and new markets to better agricultural methods and yields.

The most serious problem now is the need to sort out which ideas could actually work and to formulate detailed fundable plans for their implementation. This roadblock to agribusiness start up prevails at all scale levels but is especially acute for small and medium scale farmers. These people have neither the funds nor the expertise to carry out the necessary feasibility assessment nor business plan development and no services are in place to help them. It is this problem that Peace Corps hopes to address by the development of this manual for Volunteer use.

## PART 1

### AGRIBUSINESS - WHAT IT MEANS

We define agribusiness in its broadest terms. Agribusiness is any enterprise engaging in the production, processing, distribution and marketing of agriculture products for sale or barter.

We define agricultural products broadly to include ground and tree crops, livestock, as well as freshwater and marine fish products.

The enterprise can range from a single farmer on a small plot selling his produce to an intermediary, to a large vertically structured operation engaging in the full gamut of agribusiness activities.

### AGRIBUSINESS IN THE DEVELOPMENT

Agribusiness is a significant force in a nation's struggle for economic development for three principal reasons:

- 1) Agribusiness provides a nation with the most economical supply of food and nutrients which are so crucial to a healthy productive population.

The World Bank experts estimate that over one billion people in developing countries are undernourished. Indeed the development of domestic agribusiness, with an increased food availability at affordable prices, will afford many nations with its principal chance to survive the food/population race. Without adequate nutrition the people of no nation can be efficiently productive. Without agribusiness urban populations cannot be fed.

- 2) Agribusiness often constitutes the majority of a developing nation's production capacity.

Many, if not most, developing countries lack the mineral resources, as well as a competitive geographic location, to develop significant non-agroindustry manufacturing or assembly. What nature gives them and what they utilize most, however inefficiently or incompletely, are relatively fertile soils, abundant waters and climates which permit longer or multiple growing seasons. In fact agroindustry (processing) accounts for between 50 and 70% of most countries manufacturing output.

- 3) Agribusiness products are often the principal option a developing country has for export earnings and foreign exchange savings.

Agricultural exports account for 50-80% of export earnings in most developing countries. To add products to the list of agricultural exports, to produce and sell larger quantities, and to produce and process with more efficiency, is often the only way a developing nation has for acquiring the hard currency needed for ongoing development. Furthermore, by producing what food can be produced domestically, a nation limits the unnecessary flight of hard currency which can be used for things it cannot produce.

The developing nations themselves are increasingly aware of the importance of agribusiness development and have assigned a higher priority to this effort than ever before. In helping with the development of this sector, Peace Corps is in step with what the developing nations themselves want to accomplish.

#### THE NEED FOR SMALL AND MEDIUM SCALE AGRIBUSINESS DEVELOPMENT

In most countries in the developing world over 50% of the population live on small rural land units. In some developing countries the small rural landholders comprise as high as 80% of the population. In many countries large numbers are subsistence farming. Often it is only the lack of a cash market which perpetuates subsistence farming. If small farmers cannot be helped, in some way, to produce and market more than they consume, economic stagnation and decline are all the future holds in the face of the population increase.

In other countries land redistribution flounders because of the lack of agribusiness plans which could contribute to the economy.

Economic development is like a mosaic - if the small and medium pieces do not shine and fit in as they should, the work is virtually worthless. As Prime Minister Seaga of Jamaica explained it during his address on the 20th year anniversary of the Peace Corps: Development must start from the bottom up, beginning with the rural poor.

Creative ideas and solutions are needed and they can be found.



Ideas such as modified models for agricultural coops, medium scale vertical agribusiness linked to smaller associate producers, producer profit sharing, penetration of the hotel food industry market, mixed intensive cropping, selection of high yield varieties, small animal production using new technology for locally grown feed, introduction of new crops, improved fisheries boat construction, low cost artificial reefs, domestic market identification and seasonal export market gap identification are but a few possibilities which have worked someplace.

The key is to determine what ideas or solutions could be workable and find acceptance in each particular area. What is needed now are less farmer sympathizers and more inquisitive, creative agribusiness developers.

### A Role for You as a PCV in Agribusiness Development

A role for PCVs in the preliminary selection of specific agricultural development projects, and in the systematic assessment and development process makes sense for the following reasons:

- (1) An agriculturally oriented PCV's role within a less developed country (LDC) is such as to make you a trained integral part of a community and of the program in which you work.
- (2) Your day-to-day association over the long term, with communities and production systems within the LDCs gives you the opportunity of forming a balanced and experienced viewpoint concerning specific product production potential and an expertise and an understanding of many of the cultural and local economic constraints.
- (3) Volunteers, on-site over the long term within the LDCs are ideally located for the continuing collection of further information (government policies, production statistics, etc.) relevant to a systematic appraisal of agribusiness potential.

In a majority of cases, preliminary agribusiness assessments (e.g., pre-feasibility) are constrained by time and cost. When faced with having to first perform or commission at least a pre-feasibility appraisal, a farmer or potential agribusiness investor often "stalls at the starting line." Though pre-feasibility studies were devised to minimize business investment risk, the time taken and the cost involved tend, in many cases, to act as a disincentive to potential investors to proceed further at this time of maximum investment risk. This is especially true of small farmers who have little or no investment resources and everything to lose.

How much better it would be if aspiring small and medium scale farmers or agribusiness investors had help with, or access to, prepared agribusiness potential assessments. How much more sensible it would be if a file of preliminary assessments provided the basis for, and the promotion of, particular and alternative agribusiness investment opportunities. What better person, when trained for the work, is there than the on-site "development involved" PCV to selectively help assemble such assessments.

Advantage should be taken of long term community and agricultural contacts to undertake such work whenever possible.

Extent of PCV's involvement in the Preliminary Agribusiness Potential Appraisal - Important inputs to Preliminary Agribusiness Potential Assessments

Your intended expanded PCV task in agribusiness is pre-feasibility assessment as an initial goal. Later, participation at the business plan establishment stage is also anticipated where positive assessment result and you feel Peace Corps should assist further.

Within the context of past and present day project analysis terminology, "pre-feasibility" is synonymous with "preliminary". A preliminary assessment, if indicating a high probability of project success, would be followed by a second stage: completion of a full feasibility assessment and business plan. Conventionally, each assessment relates as follows.

The basic difference between pre-feasibility assessments and later (second stage) feasibility assessments is in the amount and detail of the information used. These quantitative differences can be illustrated through the listing of the content involved in parts of the assessment.

Pre-feasibility

Feasibility

Product Identification

No difference

Full description of geographic, climatological and prevailing business conditions. Marketing system and environment relevant to producing your product.

No difference

An analysis of previous attempts to initiate similar projects with a comparison highlighting why your new plan would work.

An analysis of previous attempts to initiate similar projects, with a comparison with sufficient data to demonstrate that your new plan will work.

Broad description of the target market.

Detailed description of the target market with quantitative market surveys and product pricing and a market plan.

Broad description of the production plan equipment, facilities and services.

Detailed description of the production plan, equipment and services.

Approximate cost/benefit estimate

Detailed cost/benefit analysis.

Broad economic justification in terms of scale, opportunity costing and economic and social benefits.

Detailed economic analysis in terms of scale, opportunity costing and economic and social benefits.

It will be clear that the main distinction between pre-feasibility and feasibility studies is mainly at the level of quantitative data accurately measured inputs, monetary costs and benefits. On the basis of such quantitative inputs, the feasibility phase of project appraisal can be further advanced by computation and the application of economic analysis techniques.

It is at this stage that we must appraise the concept of pre-feasibility insofar as it relates to preliminary analysis. Does its conventional application go far enough in terms of being quantitative enough, in terms of a production plan, market plan, and benefits/cost analysis, to fulfill their extended agribusiness development role for PCV's who want to take part in this new agribusiness development assistance program, for small and medium scale farmers and processors?

We believe that your agribusiness assessment should go beyond the limits of conventional pre-feasibility. The utility of your project assessment can be greatly enhanced by incorporating as much as you can of the requirements of "feasibility" assessment, especially as much detail as you can about the market analysis and strategy, production plan, and in determining costs and revenues.

The reason for this opinion is that, since the main objective of the Peace Corps plan is to stimulate and develop small and medium scale agribusiness, any additional detail you can provide will shorten the time of development. In some cases, especially where the project is small and the market and production methodology are relatively uncomplicated, your assessment may enable a farmer or lender to proceed without having to await a second phase (the conventional feasibility phase) of investigation.

The pre-feasibility assessment checklist in Part II of the manual provides you with a detailed outline which will enable you to perform the more complete agribusiness pre-feasibility assessment.

One final observation - something is usually better than nothing. The data will rarely be complete. All the answers will rarely be found. Project decisions are always made with imperfect information. Do as much as you can and note what is yet needed. In this way your efforts will be a valuable contribution.

### STEPS IN AN AGRIBUSINESS PRE-FEASIBILITY ANALYSIS

The analysis of a project starts with an idea and proceeds through a series of steps and decisions which lead to termination of the analysis or to a complete proposal. The flow chart on page 10-A illustrates the steps and decisions points and, where appropriate, refers to the chapters of the checklist which you would use in completing the steps.

At first sight the guidelines and tasks of an agribusiness project analysis seem formidable and demanding. To a certain extent they are. That is one reason why so few complete project analysis are done in developing countries. Once you get started on one, however, you will actually find it exciting. You will be surprised by how much information is already available which is useful to you. You will begin to feel something like a detective - "hot on a case" - systematically putting the pieces of the puzzle together.

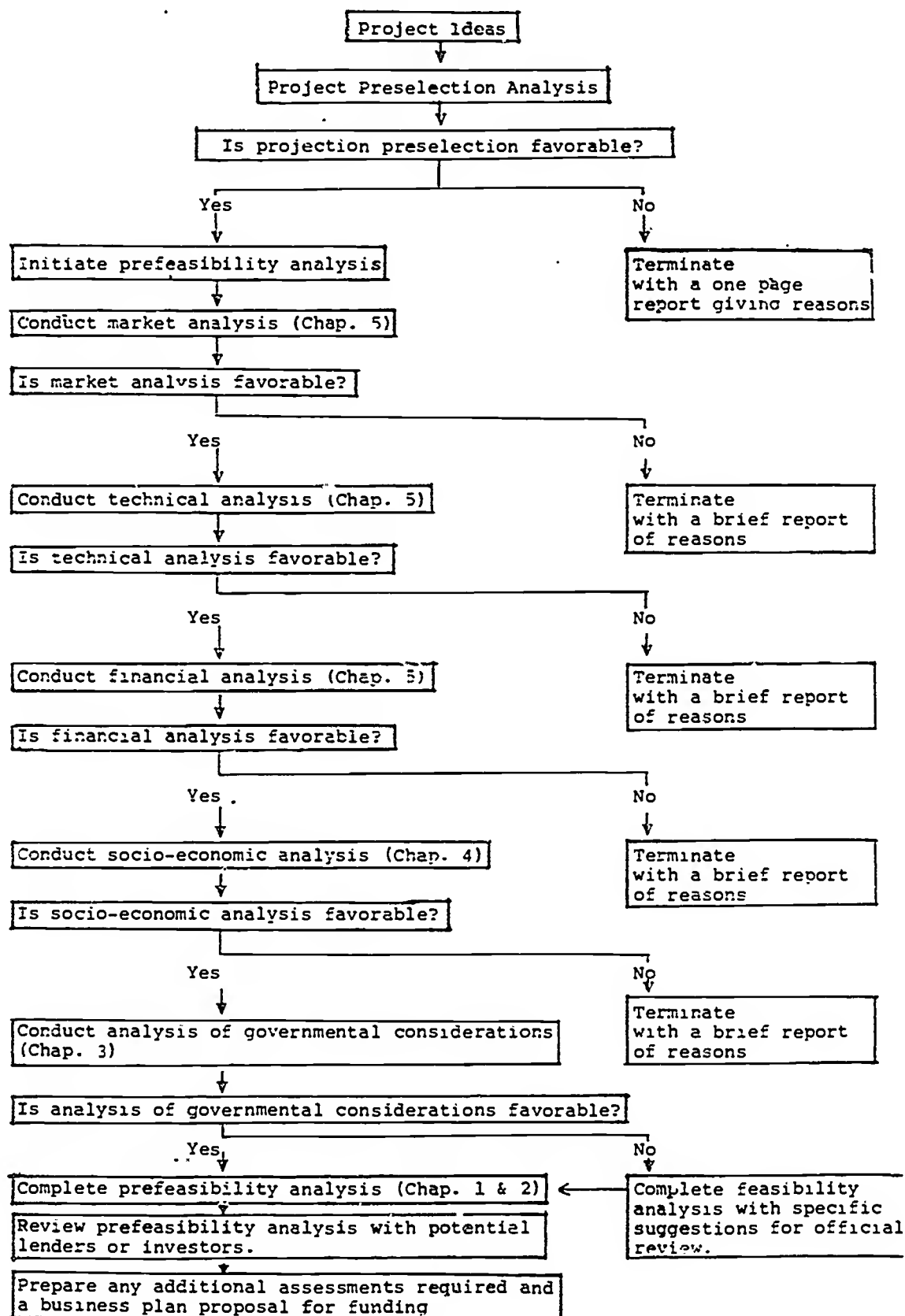
By compartmentalizing the steps, and by having the tasks in each analysis discretely defined in each chapter of the checklist, you have several advantages:

- (1) You always know where you are in the process and where you are going.
- (2) You can easily see which items don't apply to your particular project and omit them - saving time and effort.
- (3) You don't waste time and effort needlessly if results are unfavorable.

- (4) You can put the analysis "on hold" if you have to and pick up on it later, without losing anything but time.
- (5) You can split up the tasks in a step and work as a team with other persons.
- (6) If, for any reason, you cannot finish the prefeasibility analysis, someone else can pick up where you left off.

The steps and tasks can and should be used flexibly according to the requirements of each specific project.

## AGRIBUSINESS PROJECT ANALYSIS FLOW CHART\*



\*Adapted from United Nations Development Organization: Stages of  
reparation and Implementation of Industrial Projects, Bulletin  
No. 19, N.Y., 1973



## A BRIEF EXPLANATION OF THE STEPS

### Project Idea

Agribusiness ideas come from many sources - such as your own on site observations, expert opinions, consumers, farmers, and accidental circumstances. Some are suggested locally while others may be in response to a wide open foreign market looking for a producer. (For example for the past few years European wholesalers have been searching in two continents for sources of crayfish). Some of the best ideas come from brainstorming with your host counterparts, trying to find solutions to problems. The more you look for agribusiness ideas the more you will find.

### Project Preselection Analysis

Preselection analysis is simply an organized way to determine if an idea holds sufficient promise to justify the time and effort of doing an assessment.

To help you do this we have provided a project "Preselection Analysis Chart". The chart poses 10 key questions which will help you decide whether to select the idea for a pre-feasibility assessment. Basically the chart calls on you to make a few inquiries and/or use your own informed judgement. There are other factors which might weigh in a particular ideas' favor (such as the potential benefit to the economy) in a particular case. These could be included under "additional comments". The scale score and ratings are only meant to help you make a decision. In the final analysis, your own informed best judgement and your own commitment to pursuing the idea are the most important factors.

### Initiate Feasibility Analysis

Begin by estimating whether you will work on the assessment full or part time and whether you will do it by yourself or enlist the help of others. A team approach is often helpful. Generally speaking a more intensive, shorter team effort is more desirable than a drawn out one. There are often inevitable delays in getting certain pieces of information anyhow (such as certain cost quotations).

The length of time needed will of course depend on the size and complexity of the proposed project and the level of effort. Small relatively simple project assessments have been completed on a part time basis in a month. Others have taken up to six months of full time work. By going through the items and estimating the number of days needed to complete the items which you feel are necessary, you can make a fair estimate of time needed.

Estimate any costs connected with market tests, by-product tests, experimental activities, photocopying, and typing. Anticipating these expenses will help you plan how to obtain the funds or, as is often the case, get the service free of charge.

### Market Analysis

This must be the initial task of any pre-feasibility assessment - without a market there is no agribusiness. The items which need to be addressed are listed in the checklist under the "market analysis" section of chapter 5 for each subsector of Livestock, Fisheries, and Fruits and Vegetables. Sources in the host country or elsewhere for the information you will need for the market analysis are included in the appendix labeled "Sources". One of the best places to start are the import statistics.

In every country there are little known or underexploited markets. Creative exploration and analysis are the keys.

### Technical Analysis

Once the fact of a market has been established, decision makers need to understand that the project can produce the product in sufficient quantity and quality to supply the market. They need to know that the people connected with the proposed project have considered the technical aspects thoroughly and know what they are doing.

Items which need to be addressed are listed in the checklist under the "technical analysis" section of chapter 5 for each subsector.

Draw on as many experts, technical reports, maps, and test results as you can in the section. Use the numerous agricultural equipment and supply catalogues which are available - usually free of charge. You will often find production alternatives which you had not considered. Sources for agricultural equipment and supplies information are listed in the appendix under "Sources".

### Financial Analysis

The "Balance Sheet" test must be met for every viable project. Cost and revenue sheets are provided under the financial analysis section of chapter 5 of the checklist. However, those cost and revenue categories will need to be supported by more detailed costing of the various items in each category. Pricing of the various products and by products also need to be explained with the appropriate calculations. The supporting cost and price details are usually attached as an appendix to your pre-feasibility assessment.

You will be surprised at the amount of equipment and supply cost calculations which you can obtain at no charge from companies. They provide them to get the business.

### Socioeconomic Analysis

In developing countries, it is important for decision makers and planners, as well as for the people in the communities themselves, to understand the nature of the socioeconomic advantages of the proposed agribusiness. They also need to understand that the proposed plan is in the interest of the health, safety, and well-being of the people of the community and of the nation.

The items for this analysis are listed in chapter 4 of the checklist.

### Analysis of Governmental Considerations

Government policies, plans, regulations, tax incentives and levies are usually pertinent in some form to most projects. These need to be analyzed in relation to the project. In some cases you may be doing the government a service by explaining how government action impinges on a particular new or expanded industry. If changes are needed in the interest of development they need to know. The items in this analysis are listed in chapter 3 of the checklist.

### Complete the Pre-feasibility Analysis

This step involves putting together the final written pre-feasibility assessment. You will have already written the "nuts and bolts" of it in your analysis done in the previous steps. Now two tasks are involved. The first is to follow the items in chapter 2 of the checklist and write a persuasive overview of the proposed project ending with your conclusion about feasibility of your proposed project. Finally, following the items in chapter 1 of the checklist, you should write a short introduction which can serve as an executive summary, highlighting particularly important points to which you want to draw the decision makers' attention.

### Review the Prefeasibility Analysis with Decision Makers

At this point potential lenders or investors will be the focal point of your activity. Depending on the case, you may have to include a government planning agency, or you may wish to have such agency's support, in approaching lenders. In the simplest case, the individual farmer(s) with whom you work may be the only ones who need the assessment to make production and marketing decisions. In most cases you will be assisting farmers or groups to obtain start up capital at the most favorable rates. In most countries Agricultural Development Loan Agencies (generally supported by international development assistance loans) will be your first step. Usually by the time you reach this stage you will find that you already know which funding sources could be approached. Most development funding agencies are anxious to receive good proposals. They get very few.

One further suggestion: If several small farmers or farmers groups would be the owners of the enterprise, under certain conditions, a start up grant or a combination of grant and loan may be available from a development foundation. The Inter-American Foundation is an example of such a source. Ask your country director for more details.

### Prepare Additional Assessment and/or a Business Plan

What you need to do will depend on the potential lender or investor. What you have already done may be sufficient in the case of less complex projects. When you reach this stage it means that a funding source is seriously interested in or has decided to fund your project. Be guided by the format and information which the funding source requests.

### This Is A Flexible Process

Above all, this is a flexible process, remember that you can be flexible in tailoring this process to fit the needs of your project to the existing circumstances, and to your particular target audience. Every agribusiness project whether small or large comes down to "market", "method of production", "cost" and "revenue". The depth of effort and your documentation of these elements depends on the size and complexity of the project. When in doubt let your own common sense be your guide.

## PROJECT PRESELECTION ANALYSIS

BR. IDENTIFYING DESCRIPTION:

Factor Scale*	Provide any documentation, authoritative estimates and your own estimates	overall estimates
There is a known market or positive market estimate 1 2 3 4 5		overall estimate of marketability poor fair good
Species grows or is produced domestically in some form 1 2 3 4 5		overall estimate of species viability poor fair good
An applicable technology exists for production 1 2 3 4 5		overall estimate of technology availability poor fair good
The technology is transferable 1 2 3 4 5		overall estimate of tech. transferability poor fair good
There are sufficient host country persons who could be interested in this project 1 2 3 4 5		overall estimate of receptivity poor fair good
A rough cost estimate can be made 1 2 3 4 5	(include your own rough cost estimate)	rough cost estimate high reasonable low
A rough profit estimate can be made 1 2 3 4 5	(include your own rough profit estimate)	rough profit estimate high reasonable low
An estimate of anticipated problems and risks can be made 1 2 3 4 5		overall estimate of problems and risks many some few
I am interested in assessing this project 1 2 3 4 5		personal interest in project low medium high
TOTAL SCORE	(additional comments)	overall estimate of whether to undertake a prefeasibility assessment of this project positive neutral negative

\*Circle one number on the scale.

1 (least favorable) → 5 (most favorable)

Decision: selected not selected

Name:

Date:

PART II

CHECKLIST FOR AGRIBUSINESS ASSESSMENT

### DIRECTIONS FOR USING THE CHECKLIST

- \* The checklist is nothing more than an orderly set of guidelines for completing an agribusiness assessment.
- \* There is no one fixed way of writing such a report. Some development lenders have their own format for project loan applications while others do not. We have found none which itemize in detail the information required for an agribusiness. As a result people seeking funds for agribusiness projects are often asked to come back with more information.
- \* This checklist is organized so that the information is provided in an acceptable way for most development decision makers yet provides for discrete segments which could be rearranged to fit other requirements.
- \* The checklist is set out in 5 chapters to provide for a structured report which can be read in logical sequence. In making your agribusiness assessment, however, your actual work should follow the reverse sequence of chapters. You should begin with chapter five (5) and work backwards to chapter one (1). The reverse order will enable you to answer the crucial market and production questions in the beginning and to avoid wasting time on the whole assessment if you conclude that the project basically is not feasible for lack of a market or because of serious production problems.
- \* It would be wise to read the checklist through before beginning so that you will understand how it is organized.
- \* Under chapter 5 of the checklist, the subsectors: livestock, fisheries, and fruits and vegetables (including ornamental plants) are differentiated in terms of the types of items required. Thus, only that Chapter 5 corresponding to your particular project should be used. (eg. if you are assessing goat cheese production use Chapter 5 "Livestock" and ignore "Fisheries" and "Fruits and Vegetables").
- \* Work on each chapter does not preclude completing items in other chapters and in fact that may be the most convenient. For example, in analyzing the market (Chapter 5) for a product you may find material about government tax provisions (Chapter 3).

- \* It is possible that you may feel that a certain piece of information related to your project is not included among the items. Use your own judgement and include what you feel is necessary.
- \* The list of items in each chapter were assembled to provide necessary answers for a range of projects from simple to complicated ones. NOT ALL ITEMS LISTED WILL NECESSARILY APPLY TO ALL PROJECTS. Small or relatively simple projects will probably not require assessment of several items in chapters 3 and 4.
- \* USE YOUR BEST JUDGEMENT ABOUT WHICH ITEMS ARE NECESSARY FOR YOUR PROJECT ASSESSMENT. When in doubt seek the advice of your program advisor or of a person knowledgeable about the particular commodity in which you are interested or the agricultural loan officer at a development bank.
- \* It is important that quantitative (measured) rather than qualitative (estimated) data relating to project expectations (benefits and costs) be used wherever possible.
- \* In the appendix we have provided a bibliography of materials related to agribusiness in general and of specific materials related to commercial livestock, fisheries, fruits and vegetables reproduction.
- \* Where manageable we are providing samples and forms which show how to complete assessment items, make charts or tables etc. These are located in the appendix identified by chapter number and labeled "sample". The main reason the manual is in a loose leaf binder is to allow the insertion of additional sample materials.
- \* As you write, remember that while the assessment needs to provide adequate data, it should be presented as concisely as possible. You don't need to write a book. Short declarative sentences and short paragraphs are desirable. When possible make tables and graphs to illustrate your point.
- \* The appendix also includes an example of a completed pre-feasibility assessment in each of the livestock, fisheries, and fruits and vegetables subsectors which follows the checklist format.

NOTE: In front of each item, a box is provided so that you can check off items you select to complete or have completed and keep track of your work.



TITLE PAGE

(DESCRIPTIVE TITLE)

A Pre-feasibility Assessment By: Name  
Title and organization  
Date

TABLE OF CONTENTS PAGE

	PAGE
Acknowledgements	_____
Chapter 1, Introduction (list key subheadings)	_____ _____
Chapter 2, The Project Plan (list key subheadings)	_____ _____
Chapter 3, Governmental Considerations (list key subheadings)	_____ _____
Chapter 4, Project Socioeconomic Analysis (list key subheadings)	_____ _____
Chapter 5, Project Analysis	_____
Market Analysis	_____
Technical Analysis	_____
Financial Analysis	_____
Appendix I Bibliographic References	_____
Appendix II Supporting Data (include extensive statistical data, tables, detailed cost estimates etc.)	_____

ACKNOWLEDGEMENTS PAGE

By the time you have completed this assessment, you will have been assisted by many host country people, agencies, and companies. You may also have been helped by persons or organizations. It is important to acknowledge and express appreciation to these people in an "acknowledgement page" in front. People feel much more inclined to offer sustained support for project plans when their contributions are recognized.

CHECKLIST FOR AGRIBUSINESS ASSESSMENT

CHAPTER 1: INTRODUCTION \*

The introduction should explain the reason why the project was selected. It should also briefly describe the agribusiness plan, and give an overview of its aims and objectives as they relate to progress within the country and particular community. Suggested inputs as follows:

- [ ] Describe the present agribusiness activities being carried out in the field of the selected project.
- [ ] Describe the rationale used in the selection of the particular project.
- [ ] Describe, in summarized form, the basic components of the project plan; its national and community aims and objectives.
- [ ] Compare the new plan with present and past activities in the same area of agribusiness. Highlight improvements (production, commercial, community, technical etc.) to be carried out through the new plan.
- [ ] Given that the agribusiness plan is commercially viable and acceptable, discuss (predict) what future development progress could result.

\* As most of the written content of the introduction requires a knowledge of the final outcome of the project study, this Chapter is best finalized after project analysis completion.

## CHAPTER 2: THE PROJECT PLAN

This chapter should more specifically define the project plan than does the Introduction. Therefore, the following points should be given attention in a concise and persuasive overview of the project.

- [ ] Explain whether the project covers production and/or processing and/or processing and/or marketing.
- [ ] Explain the market for the proposed product(s).
- [ ] Explain whether the proposed agribusiness is a new national industry, a new community industry, addition to, or replication of, an existing industry.
- [ ] Explain aims and objectives as relating to national, community and investor(s) interest; make comparisons between the present situation and expectations for the future.
- [ ] Indicate the intended or recommended ownership status (public, private, local/foreign, co-operative etc.) of the agribusiness.
- [ ] Other key points which you consider relevant.
- [ ] State your basic conclusion about the feasibility of the project.
- [ ] If more work needs to be done before the project would be feasible, describe each specific task which needs to be completed. Include any recommendations for how each task might be accomplished.

(Complete this chapter after you complete Chapter 3)

### CHAPTER 3: GOVERNMENTAL CONSIDERATIONS

As any new agribusiness enterprise must be in accord with Government/Ministry plans and policies, a full understanding of same is required. Likewise, as government regulations may constrain or assist an agribusiness these must be fully understood and noted. Thus:

A. Review Government plans/policies pertaining directly and indirectly to the project being assessed. Consider such aspects under some or all of the following headings:

- [ ] National agricultural/agro-industrial policies, plans and objectives related to the project.
- [ ] Governmental Priority being given to agro-sectors and/or products.
- [ ] Companies legislation (public, private, cooperatives)
- [ ] Investment policies, financial restraints
- [ ] Land/site constraints (tenure etc.)
- [ ] Applicable tax rates and tax incentives for "pioneer industry" or exportable products.
- [ ] Policies directed toward specific socioeconomic development objectives (e.g. opening new lands for small farmers).
- [ ] Environmental requirements (of public health, commonlands, etc.).
- [ ] Import/Export regulations (quotas, duties, etc.) relating to raw and/or processed products.
- [ ] Import constraints or exemptions as related to capital and operating equipment.

[ ] Regulations about local/national/foreign labor.

[ ] Systems/product(s) quality control.

[ ] Marketing regulations.

[ ] Other items which you consider appropriate.

B. Summarize the Project's accordance with Government agricultural/agro-industrial plans, objectives etc.

(Complete this chapter after you completed Chapter 4)

#### CHAPTER 4: PROJECT SOCIOECONOMIC ANALYSIS

Any agribusiness must be considered in the light of its socioeconomic effects. Such considerations are conventionally referred to as non-monetary benefits and costs. They are frequently equally important or occasionally more important in final project appraisal and acceptance than are monetary benefits and costs. Some of the following points should therefore be answered in this Chapter of the assessment.

##### A. COMMUNITY DIRECT EFFECTS:

- [ ] Describe in detail the extent to which the agribusiness is expected to involve community labor; (numbers by age and sex, full or part time, year round or seasonal)
- [ ] Describe in detail the agribusiness' requirements for skilled and unskilled workforce; the potential for the upgrading of community skills, specific training needs and timetable.
- [ ] Describe the effect the agribusiness will have on the community food pool.
- [ ] Show how the agribusiness can integrate into normal community practice in the best interests of the community.
- [ ] Make reference to the likelihood of the agribusiness affecting the nutritional status of the community.
- [ ] Draw attention to the factors which may affect public health, community safety/security, life style, etc.
- [ ] Report on the overall community attitude toward the establishment of the agribusiness.
- [ ] Describe any expected change in overall community attitude toward the establishment of the agribusiness.
- [ ] Will the agribusiness result in an improvement in community services, social amenities, existing infrastructure?
- [ ] Describe and discuss any other apparent advantages and disadvantages of the agribusiness to the community.



B. EFFECT AT THE NATIONAL LEVEL:

Do not attempt a major economic analysis. Merely state briefly your best estimates, based on your figures, on how the national economy will be aided by this project:

- [ ] Estimate the proposed agribusiness' total annual worth of the products it will produce.
- [ ] Estimate the proposed agribusiness projects' total payout in wages and benefits to workers.
- [ ] Estimate what others will benefit from this project (eg: increased business for 6 truckers)
- [ ] Explain to what extent will the agribusiness increase national self sufficiency in the product(s) to be produced/processed. If an alternative to your product will not have to be imported as a result of your project, estimate the amount of money saved.
- [ ] Explain, if applicable, the expected export potential of the products to be produced/processed and the resultant contribution to foreign exchange earnings.
- [ ] Briefly summarize the non-monetary, benefits and costs to the community and country.

(Complete this chapter after chapter 5)

Though you might find that the required changes to a plan are not presently possible within the country or community, your work will still have been very valuable. It could at least for example have accurately focused in on a constraint or constraints which require further development. It will have provided a quantitative guide for future work in the interests of achieving a viable plan in the end.

Project assessment of medium and large scale livestock enterprises which could involve the integration of both agricultural and agro-industrial sectors will not differ in principle from small scale studies. The amount of data to be collected will of course be larger and benefit/cost interaction will be wider. In the final appraisal the target for medium and large scale projects in particular is to achieve greater monetary benefits than costs incurred.

Thus when selecting a project you should draw heavily on your on-going host country and community experiences and contacts. You, through continuous country/ community involvement and observations should, before entering into a formal agribusiness potential assessment, have already fairly strong evidence, benefits and cost-wise, that the project is worthwhile undertaking in detail. This means that you will be using your on-going day-to-day presence, contacts and observations in the host country at a pre-feasibility study level. A later quantitative formal assessment places you in a strong position to contribute to future public and private sector livestock agribusiness development.

Having selected a livestock project for assessment involving any one, some or all of the options referred to under (i) to (v) above, you would undertake the work already referred to in this livestock section of Chapter 5 then proceed through Chapters 4-1.

The following items for the content of the assessment will relate to small, medium and large scale projects. Not all the items listed will necessarily apply to all projects. You should select those having specific relevance to your project. For example if your project will not involve processing just ignore the "processing" items.

Though you might find that the required changes to a plan are not presently possible within the country or community, your work will still have been very valuable. It could at least for example have accurately focused in on a constraint or constraints which require further development. It will have provided a quantitative guide for future work in the interests of achieving a viable plan in the end.

Project assessment of medium and large scale livestock enterprises which could involve the integration of both agricultural and agro-industrial sectors will not differ in principle from small scale studies. The amount of data to be collected will of course be larger and benefit/cost interaction will be wider. In the final appraisal the target for medium and large scale projects in particular is to achieve greater monetary benefits than costs incurred.

Thus when selecting a project you should draw heavily on your on-going host country and community experiences and contacts. You, through continuous country/ community involvement and observations should, before entering into a formal agribusiness potential assessment, have already fairly strong evidence, benefits and cost-wise, that the project is worthwhile undertaking in detail. This means that you will be using your on-going day-to-day presence, contacts and observations in the host country at a pre-feasibility study level. A later quantitative formal assessment places you in a strong position to contribute to future public and private sector livestock agribusiness development.

Having selected a livestock project for assessment involving any one, some or all of the options referred to under (i) to (v) above, you would undertake the work already referred to in this livestock section of Chapter 5 then proceed through Chapters 4-1.

The following items for the content of the assessment will relate to small, medium and large scale projects. Not all the items listed will necessarily apply to all projects. You should select those having specific relevance to your project. For example if your project will not involve processing just ignore the "processing" items.

A. LIVESTOCK PRODUCTS MARKET ANALYSIS

The market analysis should clearly establish why you are going to the trouble of doing this assessment. This section should explain present host country activities being carried out in the selected project field. It should provide a basis against which the proposed new agribusiness can be compared. It should clearly indicate that there is a market for the products of the proposed plan. Provide enough information consistent with the following items to allow decision-makers to understand how your project relates to the existing production system and market demand for the products which you propose to market through the project.

- [ ] Explain the type of livestock and/or products which are involved in the plan.
- [ ] Detail the present number of national units (location) involved similar to the proposed agribusiness. (e.g. number/acres of farms and/or number of processing plants and/or number of marketing groups etc.)
- [ ] Compare present production capacity utilization efficiency with that considered to be optimal. (i.e. How are they using what they have)
- [ ] Record national production figures for respective livestock and products (raw materials or processed) as appropriate. (Tabulate production figures over at least the preceding 5-10 years).
- [ ] Record national imports and export of respective livestock and/or products (raw materials or processed) as appropriate (5-10 years duration).
- [ ] Identify, if applicable, the international markets and explain the export potential for the products of the plan.
- [ ] Review the existing market outlets for the product(s) (primary or processed as applicable). Consider local markets (e.g. farm gate buyers, wholesalers, corner store, retailers, hotels). Export markets will require assistance from export agents.
- [ ] Obtain and report upon country/community consumption preferences and levels of the respective product(s). If possible differentiate between quantities sold through/to the different markets.

- [ ] Investigate and report on product(s) quality control, grading packaging, regularity of supply requirements in the market places.
- [ ] Analyze changes in demand during the last 3-5 years and determine the most likely future demand for product(s) of the plan.
- [ ] Identify target markets for the product(s) based on sales opportunity over the shorter and longer term and in accord with the standard of product(s) to be produced.
- [ ] Compile a list of likely prices to be obtained for product(s) in different markets (franchise, wholesale, retail) over time (3-5 years) and seasons (i.e. in season, out of season., gluts and shortages etc.) Compare import prices for comparable products.
- [ ] Discuss and explain a marketing strategy for product(s) within the constraints of your seasonal productions alternatives of fresh or processed products.
- [ ] Describe the proposed distribution system.
- [ ] Other items which you consider important background information
- [ ] Conclude with a rationalized case for entering your proposed product(s) into an identified market.

B. LIVESTOCK TECHNICAL ANALYSIS

PROJECT SITE CONSIDERATIONS:

(a) Location:

- [ ] Geographical location of site; provide location and site maps.
- [ ] Land area involved in plan.
- [ ] Present utilization of land/ site.
- [ ] Detail any land use or planning constraints associated with site.
- [ ] Report on suitability of location for intended livestock/ products/ processing agribusiness.

(b) Site Infrastructure:

- [ ] Explain area and on-site availability of public services (e.g. power, water, communications etc.)
- [ ] Explain transport access/egress (roads, bridges, etc.)
- [ ] Report on existing buildings as suited to the project (e.g. housing for staff and stock ; storage for feedstuffs, products etc., buildings for vehicles, workshops, machinery, stores, dairy etc.)
- [ ] Availability in-area or on-site, of product harvesting/ processing facilities (e.g. slaughter house, abattoir, chilling/freezing facilities, general storage, grading, packaging, warehousing).
- [ ] Report on existing fencing for stock containment; yards for handling.
- [ ] Identify and draw up a list of infrastructure requirements ( buildings, roads, materials etc.) for project establishment.
- [ ] Determine services requirements ( power-Kwh; water-gallons; gas-cubic meters; etc.) for agribusiness function.

(c) Environmental Conditions:

- [ ] Report on seasonal characteristics.
- [ ] Report on annual rainfall and humidity.
- [ ] Report on annual temperatures and temperature variations.
- [ ] Report on potential for natural disaster (e.g. hurricane, flood etc.). Note any related construction requirements.

(d) Soil Status:

- [ ] Provide soil maps, profiles.
- [ ] Report on soil types; site analyses.
- [ ] Identify and report on soil limitations/ advantages as pertaining to the proposed livestock production.

(e) Pasture/Forage Status:

- [ ] Report on resident pastures (species and species mixes).
- [ ] Explain season/ climate and pasture production interaction (e.g. pasture and forage, dry matter production by season and climate ).
- [ ] Report on the nutritive value (as per livestock planned) of pastures/ forages for the purposes of grazing and as a source of supplementary/ concentrate feedstuffs (cut and carry etc.).
- [ ] Identify and report upon the pasture/ forage requirements of the livestock enterprise and the measures required (new species, mixes, cultivation, fertilizers) to adequately upgrade in accord with specific needs and husbandry plans.
- [ ] Review optimal pasture/ forage growth for livestock production in the light of alternative feedstuffs both locally produced and imported (quantities, etc. required)

C. METHOD AND REQUIREMENTS FOR LIVESTOCK PRODUCT(S) PRODUCTION and/or PROCESSING

Depending on how integrated the livestock plan is (i.e. livestock and livestock product(s) production and/or product(s) processing) you should refer only to the appropriate sub-headings below.

(a) Livestock and livestock product(s) production methods and requirements

- [ ] Specify the breed or strain of animal chosen for the particular livestock sector. Explain why chosen. If possible make comparisons (production-wise) with other local exotic and indigenous breeds (strains).
- [ ] Discussion of adaptability (e.g. climate and health-wise) of selected breeds to local conditions under the breeding/production methods proposed.
- [ ] Provide evidence (from personal deduction and/or recorded references) about specific levels of quality and quantity of production which you predict the animals will achieve.
- [ ] Explain if the method of production is to be natural (i.e. open grazing/foraging with some supplementary feeding) or intensive methods of animal husbandry.(i.e. a high level of in-house or coralled husbandry; hand feeding.)
- [ ] If field husbandry methods are to be employed, explain the annual stock rotation plan in relation to open grazing and/or intense systems. Relate to feed (pasture, hay, concentrates) availability.
- [ ] Explain other feed sources (e.g. institutional slop, abattoir waste, fishmeal, etc.) and what part they will play in the feeding plan.
- [ ] Explain if natural and/or artificial (AI, embryo transplantaion) animal propagation is to be used. Discuss reasons for particular choice.



- [ ] Explain the animal breeding plan in terms of annual frequency , times for mating and parturition, ratio of male to female breeders, differential groups mating i.e. for sustained production. (The latter two for medium and large scale only).
- [ ] Draw up a conceptual ground plan of the production site in terms of an area subdivision, buildings, corrals, services, etc.as applicable.
- [ ] Consider and record yearly and throughout year animal health treatments (vaccination, antibiotic, drenching, dipping, feet treatments, etc.) necessary for optimal production. Make reference to particular health problems.
- [ ] Describe hygiene requirements of the production plan.
- [ ] Report on the production characteristics of the selected livestock under the intended husbandry and feeding conditions in terms of:
  - (a) Fertility
  - (b) Prolificacy
  - (c) Multiple birth types
  - (d) Losses (perinatal/ postnatal)
  - (e) Stock replacement plans
- [ ] Determine and record the annual feeding plan for livestock differentiating between stages of the production cycle (e.g. mating, gestation, parturition, lactation, finishing) for optimal production.
- (b) Livestock products processing methods and requirements

If the project goes beyond the live animal and/or primary products the processing of primary products the following points must be given attention in the assessment.

- [ ] Describe the extent to which the primary product is to be processed (e.g. slaughtered for carcass, carcass to cuts, carcass to meat products, milk for chilling, pasteurizing, butter or cheese, eggs for grading and packaging etc.).
- [ ] Indicate if such processing is to be carried out under contract or does processing require vertically integrated facilities extra to production systems.

- [ ] Describe the appropriate processing stages required for conversion of primary product(s) to the selected processed product stage.
- [ ] Justify the methods of processing recommended and planned, through personal experienced deduction and/or reference to established work which is applicable. (Draw heavily on recommendations made by existing processors and the manufacturers and sellers of processing equipment.)
- [ ] Supply specifications of processing equipment (brochures etc. as an appendix to the report).
- [ ] Explain the quality control requirements for products(s) processing.
- [ ] Explain any other requirements or plans which you feel are important

#### D. FINANCIAL ANALYSIS:

This is a guideline for a very simple financial analysis. For many projects, depending on their complexity and the amount of funds or source of funds which are sought, a more extensive financial analysis will be necessary. APPENDIX A describes briefly some standard financial calculations which may be requested from funding organizations for larger projects. Assistance in performing these calculations, if required, is generally available either from the funding organizations or development assistance organizations. At minimum, however, you will need to perform the analysis outlined below:

##### 1. Project Costs

- Determine the capital costs required to achieve 95% or more of production capacity in the first year.
- Determine the capital costs using the cost sheet as a guideline in selecting those items which are applicable.
- Determine your amortized capital cost by (1) estimating the most favorable terms which you can reasonably expect (the rate of interest and the number of years for repayment); (2) consult an interest amortization table to calculate monthly/annual repayment cost; (3) a 12 month total of this repayment of principle and interest gives you the amortized capital cost figure.
- Determine your operating costs using the cost sheet as a guideline in selecting those items which are applicable.
- Add the amortized capital cost to the annual operating cost for the total annual cost.
- Place the total annual cost figure against gross revenue per year for the simplest monetary cost/benefit ratio based on 95% production capacity.

##### NOTE:

The cost sheet follows on a separate page. You should develop a complete good copy of your work sheets as an appendix on which calculations for each cost and revenue source is presented in detail.

## ITEM

COST

TOTAL

## ITEM

COST

TOTAL OPERATING COSTS

## 2. Project Outputs, Revenue Sources

Whether the livestock products be primary or processed you need to develop an annual production and revenue plan within the constraints of three basic pieces of information you need to provide. (A one page table presenting this information is preferred.)

- (1) The quantity of each product - primary, processed or by-product - which will be produced each year.
- (2) The anticipated revenue from each product for each year.
- (3) A statement of annual gross revenue based on (1) & (2).

LIVESTOCK PROJECT REVENUE SHEET

<u>ITEM</u>	<u># UNITS</u>	<u>UNIT PRICE</u>	<u>TOTAL ITEM REVENUE</u>
-------------	----------------	-------------------	---------------------------

Primary Product(s)

By-product(s)

Processed Product(s)

Other sources (i.e. lease  
of equipment, land, fees  
for service etc.)

47

TOTAL REVENUE

48

LIVESTOCK PROJECT COST/REVENUE ESTIMATE

Cost Items

Amortized Capital Cost (capital cost divided by 10)

Annual Operating Cost

TOTAL ANNUAL COST \_\_\_\_\_

TOTAL REVENUE (all sources) \_\_\_\_\_

NET ANNUAL PROFIT/LOSS \_\_\_\_\_

## CHAPTER 5 FISHERIES PROJECT

### Preliminary Remarks:

For a fisheries project you will be planning for either aquaculture (fresh or salt water) or capture fisheries. You might be planning a project at any one or a number of stages from sale of live fish through to the sale of primary or processed products.

Your project could likely involve small, medium or large scale production and/or marketing.

Whatever the scale your options could be:

### Aquaculture

- (i) Producing fry fingerlings, broodstock, post larvae, spat, etc. for sale to producers
- and/or (ii) Production of primary product(s) fish, marine or fresh water shrimp, oysters, eels, frogs, turtles, brine shrimp, etc. for consumption
- and/or (iii) Handling and sale of primary products
- and/or (iv) Processing of primary products for sale, e.g. filleting, smoking, salting, pickling, canning, oil extraction etc.
- and/or (v) Freezing, warehousing/marketing of primary and processed products

### Capture Fisheries

- (1) Bait capture for sale
- and/or (2) Capture fishing of primary products
- and/or (3) Handling and sale of primary products
- and/or (4) Processing of primary products for sale, e.g. filleting, slicing, gutting, deboning, smoking, salting, pickling, canning, oils extraction, skin curing, etc.
- and/or (5) Freezing, warehousing/marketing, of primary or processed products



In the simplest of cases you might be assessing the production capacity / products of a small fish pond, throw net, or canoe in terms of family self sufficiency, or revenue generated through the sale versus cost of production.

Clearly however, at any level of production, benefits (monetary and non-monetary) in excess of costs will be the objective of your agribusiness plan. The extent to which benefits exceed costs should be determined.

Even if sufficient benefits cannot be demonstrated, a systematic, quantitative measurement of project inputs and outputs can identify strengths/weaknesses of a plan. It will reveal those stages or parts in a plan which require change or modification if economic feasibility is to be achieved.

Though you might find that the required changes to a plan are not presently possible within the country or community, your work will still have been valuable. It could at least, for example, have accurately focused in on a constraint or constraints which require further development. It will have provided a quantitative guide for future work in the interests of achieving a viable plan in the end.

Project assessment of medium and large scale fisheries enterprises which could involve the integration of both production and processing industrial sectors will not differ in principle from small scale studies. The amount of data to be collected will of course be larger and benefit/cost interaction will be wider. In the final appraisal the target for medium and large scale projects in particular is to achieve greater monetary benefits than costs incurred.

When selecting a project you should draw heavily on your on-going host country and community experiences and contacts. Your continuous local involvement and observations will in many cases already provide fairly strong evidence in terms of costs and benefits that the project is worthwhile undertaking in detail. A later quantitative formal assessment places you in a strong position to contribute to future public and private sector agribusiness development.

Having selected a fisheries project for assessment involving any, some or all of the options referred to under (1) to (5) above, you would undertake the work already referred to in this fisheries section of Chapter 5 then proceed through chapters 4-1.

The following items for the content of the assessment will relate to small, medium and large scale projects. Not all the items listed will necessarily apply to all projects. You should select those having specific relevance to your project. For example, if your project will not involve processing just ignore the "processing" items.

#### A. FISH PRODUCT MARKET ANALYSIS

The market analysis should clearly establish why you are going to the trouble of doing this assessment. This background section should explain present host country activities being carried out in the selected project field. It should provide a basis against which the proposed new agribusiness can be compared. It should clearly indicate that there is a market for the product(s) of the proposed plan. Provide enough information with the following items to allow decision makers to understand how your project relates to the market demand and production system for the products which you propose to deliver through the project.

- [ ] Explain the type of fish or fish products which are involved in the plan
- [ ] Detail the present number of national units (location) involved similarly to the proposed agribusiness. (e.g. hatchery, number/ acreages of ponds or boat capacity and/or number of processing plants and/or number of marketing groups etc.)
- [ ] Describe the present methods of fish product(s) production and/or processing and/or marketing (as appropriate); highlighting constraints to be improved upon in new plan.
- [ ] Compare present production capacity utilization efficiency with that considered to be optimal (how they are using what they have).
- [ ] Record national production figures for respective fish and fish products (raw materials or processed) as appropriate. (Tabulate productions figures for over at least the preceding 5-10 years).
- [ ] Identify international markets, if applicable, and explain the export potential for the products of the plan.

- [ ] Review the structure of existing market network from the producer to consumer for primary or processed products as applicable. Provide a diagram of existing collection and distribution channels. Describe all aspects including producer, wholesaler/intermediary, retailer, consumer. Analyze and compare resident consumer market vis-a-vis hotel/restaurant trade. If export is being considered explain target market rationale, export channel and transport alternatives.
- [ ] Obtain and report on local and country consumption, preferences, and demand levels for the various fish products. If possible differentiate between products sold to the different markets.
- [ ] Investigate and report on requirements vis-a-vis quality control, grading, packaging, and quantity and regularity of supply to the various markets.
- [ ] Analyze changes in demand during the last 3-5 years and determine the most likely future demand for product(s) of the plan.
- [ ] Identify target markets for the product based on sales opportunity over the short and longer term based on the standard of products to be produced.
- [ ] Based on a price survey at pondgate /dockside, wholesale and retail levels, compile a list of likely prices including seasonal variations. Note any probable drop in prices below production cost and duration of the lower price.
- [ ] Discuss and explain a marketing strategy for your product(s). Anticipate marketing obstacles and describe alternatives for overcoming.
- [ ] Describe the proposed distribution system.
- [ ] Add any other details which you consider important.
- [ ] Conclude with a rationalized case for entering your proposed products into an identified market.

B. FISHERIES TECHNICAL ANALYSIS

PROJECT SITE CONSIDERATIONS:

AQUACULTURE SITE (for freshwater and mariculture projects only)

(a) Location:

- [ ] Describe geographical location(s) and provide some type of site map.
- [ ] Demonstrate land suitability vis-a-vis:
- [ ] Topography - utilize available topographical maps and site visit to verify flat land.
- [ ] Acreage - describe amount needed and amount identified.
- [ ] Soil Ph - provide random soil Ph samples utilizing soil Ph meter or wet method.
- [ ] Proximity of water table - utilizing test drilling or ditches.
- [ ] Identify soil and evaluate its suitability for pond construction and water containment. Obtain random core samples at least 2 feet in depth and obtain particle analysis from a qualified technician.
- [ ] Provide survey of existing vegetation on site.
- [ ] Describe any existing land use or planning constraints associated with the site.
- [ ] Report on suitability and availability of location(s) for intended aquaculture/products/processing business.

(b) Water suitability:  
(aquaculture only)

- [ ] Identify sources of fresh and/or salt water.
- [ ] Describe daily and monthly fluctuations in salinity by obtaining refractometer or hydrometer readings.
- [ ] Demonstrate that there is enough water to supply the project for water exchange and pond filling and note anticipated fluctuations due to climate.
- [ ] Describe water quality from data obtained from 1 liter samples submitted for lab analysis for dissolved organics, phosphates, nitrates, ammonia, suspended solids. Note any seasonal fluctuations due to climate.
- [ ] Describe tidal amplitude (mariculture) giving maximum tidal range and daily variations obtained from tide tables and outside measurements.

Note if any threats to water quality are present through industrial or agricultural activity and how the problem could be overcome.

(c) Climate  
(Aquaculture only)

- [ ] Describe air temperature daily and seasonal fluctuations as they relate to the project.
- [ ] Describe rainfall fluctuations as they relate to the project.
- [ ] Evaluate the relative hurricane hazard threat to the project.
- [ ] Evaluate wind velocity and direction as it relates to the project.
- [ ] Evaluate the threat of major flooding as it relates to the project.

CAPTURE FISHERIES LOCATION (for marine capture fisheries only)

(a) Fishing Location

- [ ] Describe geographical location(s) of proposed fishing area in relation to direction(s) and distance from land, providing reference points from known coastal sites and by latitude and longitude.
- [ ] Provide oceanographic details of fishing area (e.g. depth chart data, reef, trench and Cay location etc.)
- [ ] Provide information on currents and seasonal fluctuations as it relates to operating in the capture area.
- [ ] Provide data on the weather as it relates to operating in the capture area(s) including seasonal fluctuations.
- [ ] Provide data on water temperature fluctuations.
- [ ] Describe nutrient and food availability in the water of areas as it relates to attracting and supporting marine life.
- [ ] Describe historical and current use of projected capture area by other fishing operations and the effect if any on the project.
- [ ] Describe constraints on fishing in proposed area and methods for overcoming them.

(b) Port Location  
(marine capture fisheries)

- [ ] Describe location of project port(s)
- [ ] Provide data on existing port use by number and type of vessels and the effect the project will have on port capacity and operations.
- [ ] Describe physical characteristics of port area.

- [ ] Describe any constraints on utilizing the port(s) area and any proposed methods for overcoming them.

For both Aquaculture and Capture Fisheries

(c) Site and/or port infrastructure

- [ ] Provide details on area and on site availability of public services (e.g. power, water, communications.)
- [ ] Describe existing structures in relation to project use.
- [ ] Describe availability in-area or on-site of product processing facilities (e.g. chilling, freezing facilities, storage, holding tanks, general work buildings etc.)
- [ ] Identify and draw up list of any infrastructure requirements (buildings, roads, excavations) for project establishment.
- [ ] Determine and list project service requirements (power-Kwh, water-gallons, gas-cubic meters) for project operations.

2. Method and requirements for fisheries product(s)  
production and/or processing

Depending on how integrated the fisheries plan is in terms of product in and/or processing, you need only utilize items which apply to your project. "Production methods" for aquaculture and capture fisheries are separated for easier use of only those items needed. Remember to check the items completed.

(a) Aquaculture production

- [ ] Specify the species and where possible the variety selected for production. Explain why chosen. If possible make comparisons production-wise with other local exotic and indigenous species/varieties.
- [ ] State whether mono- or poly-culture will be utilized and if using polyculture, provide information on species compatibility.
- [ ] Describe the species/variety's biological characteristics. (What are the species/variety's unique environmental, nutritional, behavioral, reproductive requirements and tolerance at each stage in its life cycle?)
- [ ] Provide a concise and convincing summary of the technical information which leads you to believe the species/variety can be raised. Cite your sources, (i.e. the existence of facilities demonstrating that it can be grown, key technical articles and/or data, authoritative expert opinion etc.)
- [ ] Note any comparable local commercially successful operation currently farming this species/variety or cite successful operations in similar environment.
- [ ] Explain the method of product vis-a-vis whether production will be intensive or extensive and why, in terms of high vs. low management systems, production costs and yields, include method of feeding and costs.
- [ ] Explain source of stock i.e. fry fingerlings, broodstock, post larvae, spat etc. and whether they will be indigenous or imported.
- [ ] Describe the source of feedstock vis-a-vis your own hatchery or collection from the wild.
- [ ] Provide details of your production methodology (provide an outline and flow chart). Explain what aquaculture facilities will be utilized ( e.g. maturation, reproduction, hatchery, nursery ponds, grow out ponds, broodstock ponds, raceways, tanks etc.)



- [ ] Draw a conceptual plan of the physical plant.
- [ ] Explain how you will concentrate and harvest your product.
- [ ] If you intend to convert an existing operation explain how you intend to do this, e.g. rehabilitation of facilities, change in production methodology etc.
- [ ] Describe the hygiene requirements of the production plan vis-a-vis potential species and human health problems. Make reference to particular health problems and planned prophylaxis or treatment.
- [ ] Explain production characteristics of species under your production plan in terms of:
  - Fertility
  - Prolificacy
  - Losses
  - Stock replacement needs
  - Yield in terms of size, quantity, and quality

(a) Capture fisheries production

- [ ] Specify the species and if applicable, the variety you plan to harvest. Explain why.
- [ ] Describe the species biological characteristics. What are the species/varieties unique environmental, nutritional, behavioral reproductive requirements and tolerance as applicable to the project e.g. what does it eat, does it school, where does it spawn, migration/seasonality patterns etc.
- [ ] Provide a concise and convincing summary of the technical information which leads you to believe you can commercially harvest the species /variety. Cite your sources e.g. exploratory fishing data, fish landings data of existing operations, species identification survey, key technical articles etc.

- [ ] Note any comparable local commercially successful operations currently harvesting this species/variety.
- [ ] Explain the scale level of your production and the reasons in terms of fisherman expertise and capability, production costs vis-a-vis yields in comparison with other options.
- [ ] Provide details of your production methodology. Provide an outline and flowchart. Provide detailed description specifications and characteristics of boats and gear which will be utilized and reasons for selection. Note any modification of any existing equipment. Provide drawings, photos and/or blueprints for boats gear if possible. Include harvest methodology i.e. trawl, seine gill net, trap type etc. Also, note any chilling, freezing and storage equipment to be utilized on the vessels and the holding capacity of these units.
- [ ] Explain anticipated harvest in terms of:
  - Size and weight
  - Quantity
  - Quantity distribution by month
  - Accidental catch of other marketable varieties

(b) Fish Processing

If the project goes beyond live sale of fish, crustaceans etc. use as applicable for both aquaculture and capture fisheries projects

- [ ] Give a general description of the extent and/or limits of the product processing which is intended (e.g. gutting and/or icing for sale, filleting, smoking, salting, pickling, canning, skinning, oil extraction, freezing, packaging etc.)
- [ ] Indicate if such processing is to be carried out under contract or do you plan vertically integrated (doing it as part of your own operation) facilities in addition to your production/harvesting system.

- [ ] Describe the appropriate processing stages required for conversion of primary product(s) to the selected processed product stage. Capture fisheries should include any "on vessel" processing (e.g. gutting) in this item.
- [ ] Justify the method of processing recommended and planned, through personal experienced deduction and/or reference to established processes which are applicable. (Draw heavily on recommendations made by existing processors and the manufacturers and sellers of processing equipment. Many will be willing to provide you with printed data and descriptions of their equipment and its output.)
- [ ] Supply specifications of processing equipment (brochures etc.) as an appendix to the report.
- [ ] Indicate volume of output per processed product per month for a year.
- [ ] Explain quality control requirements and methods during product processing. Make sure to show how any "cold chain" requirements will be maintained.
- [ ] Describe as applicable any health, hygiene and safety prophylactic measures and methods applicable to product processing.
- [ ] Explain any other requirements or plans which you feel are important.

#### D. FINANCIAL ANALYSIS:

This is a guideline for a very simple financial analysis. For many projects, depending on their complexity and the amount of funds or source of funds which are sought, a more extensive financial analysis will be necessary. APPENDIX A describes briefly some standard financial calculations which may be requested from funding organizations for larger projects. Assistance in performing these calculations, if required, is generally available either from the funding organizations or development assistance organizations. At minimum, however, you will need to perform the analysis outlined below:

##### 1. Project Costs

- Determine the capital costs required to achieve 95% or more of production capacity in the first year.
- Determine the capital costs using the cost sheet as a guideline in selecting those items which are applicable.
- Determine your amortized capital cost by (1) estimating the most favorable terms which you can reasonably expect (the rate of interest and the number of years for repayment); (2) consult an interest amortization table to calculate monthly/annual repayment cost; (3) a 12 month total of this repayment of principle and interest gives you the amortized capital cost figure.
- Determine your operating costs using the cost sheet as a guideline in selecting those items which are applicable.
- Add the amortized capital cost to the annual operating cost for the total annual cost.
- Place the total annual cost figure against gross revenue per year for the simplest monetary cost/benefit ratio based on 95% production capacity.

##### NOTE:

The cost sheet follows on a separate page. You should develop a complete good copy of your work sheets as an appendix on which calculations for each cost and revenue source is presented in detail.

FISHERIES PROJECT COST SHEET

Capital Costs

<u>item</u>	<u>Costs</u>
Land, purchase, lease.....	
Land clearing.....	
Pond construction costs (aquaculture).....	
Equipment (e.g. boats, nets, pumps, blowers, ice machine, stand by generators, furniture etc.).....	
Buildings (e.g. lab, offices, processing facilities etc.).....	
Professional services (one time capital cost type) (e.g. engineers, surveyors, electricians etc.).....	
	TOTAL _____

Operating cost (annual)

<u>Item</u>	<u>Costs</u>
Personnel (labor, tech assistance etc.).....	
Employer contribution to personnel benefits....	
Utilities.....	
Communications.....	
Feed and fertilizer (aquaculture).....	
Broodstock/seed stock (aquaculture).....	
Fuel.....	
Other (expendable supplies and materials).....	
Taxes. licenses etc.....	

TOTAL OPERATING COSTS \_\_\_\_\_

2. Project outputs, revenues, sources and revenues for both aquaculture and capture fisheries

Whether the fish products be primary or processed you need to develop an annual production and revenue plan within the constraints of the system you have proposed. The production/revenue plan consists of these basic pieces of information:

- (1) The quantity of each product - primary, processed or by products- which will be produced each year.
- (2) The anticipated revenue from each product for the year.
- (3) A statement of annual gross revenue return based on (1) and (2).

FISHERIES PROJECT REVENUE SHEET

Revenue

<u>Item</u>	<u># Units</u>	<u>Unit Price</u>	<u>Total Item Revenue</u>
Primary product(s)			
By product(s)			
Processed product(s)			
Other sources (i.e. lease equipment, land, fees for services etc.)			

TOTAL REVENUE \_\_\_\_\_

FISHERIES PROJECT COST/REVENUE ESTIMATE

Cost Items

Amortized Capital Cost (capital cost divided by 10)

Annual Operating Cost

TOTAL ANNUAL COST \_\_\_\_\_

TOTAL REVENUE (all sources) \_\_\_\_\_

NET ANNUAL PROFIT/LOSS \_\_\_\_\_



## CHAPTER 5: Fruit and Vegetable Projects

### Preliminary Remarks

For a fruit and/or vegetable project (this chapter is also applicable for ornamental plants) you might be planning project involvement at any or a number of stages from the sale of seed or cuttings through to the sale of primary or processed products.

Your project could likely involve small, medium or large scale production and/or marketing.

Whatever the scale, your options could be:

- (1) Producing seeds or cuttings for sale to producers
- and/or (2) Production of nursery plants for sale to producers
- and/or (3) Production of primary products (fruits, vegetables, ornamental plants for consumption.
- and/or (4) Handling, assembly, grading, packaging, and sale of fresh products.
- and/or (5) Processing of primary products for sale (e.g. canning, freezing, drying, pickling, candying or coating, roasting, packaging.
- and/or (6) Storing, transporting, wholesaling, or retailing of fresh and/or processed products.

In the simplest of cases you might be assessing the production capacity of a family plot or small farm (1-2 acres) in terms of family self sufficiency or revenue generated through sale versus production costs.

Clearly however, at any level of production, benefits (monetary and non-monetary) in excess of costs will be the objective of any PCV agribusiness plan. The extent to which benefits exceed costs should be determined.

Even if sufficient benefits cannot be demonstrated, a systematic, quantitative measure of project inputs and outputs can identify strengths/ weaknesses of a plan. It can reveal those stages or parts in a plan which require change or modification if economic feasibility is to be achieved.

Though you might find that the required changes to a plan are not presently possible within the country or community, your work will still have been valuable. It could at least, for example, have accurately focused in on a constraint(s) which requires further development. It will have provided a quantitative guide for future work in the interests of achieving a viable plan in the end.

Project assessment of medium and large scale fruit and vegetable enterprises which could involve the integration of both production and processing elements will not differ in principle from small scale studies. The amount of data to be collected will of course be larger and benefit/cost interaction will be wider. In the final appraisal the target for medium and large scale projects in particular is to achieve greater monetary benefits than costs incurred.

When selecting a project you should draw heavily on your on-going host country and community experiences and contacts. Your continuous local involvement and observations will in many cases already provide fairly strong terms of costs and benefits, that the project is worthwhile undertaking in detail. A later quantitative formal assessment places you in a strong position to contribute to future public and private sector agribusiness development.

Having selected fruit, vegetable or ornamental plant project for assessment involving any, some or all of the options referred to under (i) to (vi) above, you would undertake the work already referred to in this fruits and vegetables section of Chapter 5 then proceed through Chapters 4-1.

The following items for the content of the assessment will relate to small, medium and large scale projects. Not all the items listed will necessarily apply to all projects. You should select those having specific relevance to your project. For example if your project will not involve processing just ignore the "processing" items.

A. Fruit and Vegetable Products Market Analysis

The market analysis should clearly establish why you are going to the trouble of doing this assessment. Background information should explain host country activity related to your proposed project. The background material should be specific to the particular fruit or vegetable you have selected. It should provide a basis against which your proposed new agribusiness can be compared. It should clearly indicate that there is a market for the products of the proposed plan, provide enough information with the following items to allow decision makers to understand how your project relates to the market demand and production system for the products which you propose to deliver through the project.

Note: You very likely can obtain data on units, acreage etc. from the Ministry of Agriculture Planning unit.

- [ ] Explain the type of fruit, and vegetable or plant and/or products which are involved in the plan. Identify the species involved by Latin name, common name, and the specific varieties involved.
- [ ] Describe the number of units (Farms, processing plants) that currently produce or handle the specific fruit(s) or vegetable(s) you have identified.
- [ ] Describe size distribution of these units, if known (e.g. percent of product produced or handled by target groups of project. Example : 20% of all tomatoes in the region are grown by approximately 14 farmers, while the remaining 80% are grown by two large firms).
- [ ] Provide detail on the capacity of each unit (number of acres available; planting and crop rotation history in the area; current output (kgs, tons etc.) capacity and inventory capacity of farmer and/or processor; cropping mix).

- [ ] Compare present production capacity utilization efficiency with that considered to be optimal. (ie how are they using what they have)
- [ ] Record domestic production figures relevant to products which you propose to produce. Figures should be disaggregated if possible (National, regional, local) to obtain estimates of production relevant to the scale of your project. Information in this section is best displayed via simple charts or tables. Quantity (tons) is the simplest figure to collect. 10 years data is convenient if available; 3-5 years is adequate.
- [ ] Record national imports and exports of your proposed products (raw or processed); try to obtain figures for 3-5 years.
- [ ] Identify international markets, if applicable, and explain the export potential for products of the plan.
- [ ] Review the structure of the existing market network from producer to consumer for primary or processed products as applicable. Provide a diagram of existing collection and distribution channels. Describe all aspects including producer intermediary/wholesaler, retailer and consumer. Analyze consumer market vis-a-vis hotel/restaurant trade. If export is being considered, explain target market rationale, handling and export channels, transport alternatives, inspection and fumigation provisions and import, handling and distribution channels from port of entry to consumer. Explain anticipated method of payment (an export agent can help you with this).
- [ ] Obtain and report country/community consumption/preference and demand levels of the product(s) you will sell. If possible differentiate between quantities sold to different markets.
- [ ] Investigate and describe requirements vis-a-vis quality control, grading, packaging, as well as quality and regularity of supply to the various markets.
- [ ] Describe any competitive advantage your production and/or processing methods will provide.

- [ ] Analyze changes in demand during the last 3-5 years and determine the most likely future demand for the products you plan to produce.
- [ ] Nominate target markets for the product based on sales opportunity over the short and longer term based on the standards of products to be produced.
- [ ] Based on a price survey at farmgate, wholesale and retail levels, compile a list of likely prices including seasonal variations. Note any probable drop in price (due to gluts etc.) below production costs and the duration of the lower price.
- [ ] Discuss and explain a marketing strategy for your products. Anticipate marketing obstacles and describe alternatives for overcoming them.
- [ ] Describe the proposed distribution system.
- [ ] Explain any other requirements or plans which you consider important.
- [ ] Add any other details which you consider important which fit in this section.
- [ ] Conclude with a rationalized case for entering your proposed products into an identified market. (e.g. that your plan will put a fruit or vegetable with a competitive price advantage into the hotel market.)

B. TECHNICAL ANALYSIS FOR FRUITS AND VEGETABLES

Project Site Considerations

a. Location:

- [ ] Geographical location of site; provide location and site maps if available. Sketches are useful.
- [ ] Land area involved in plan.
- [ ] Present utilization of land/site.
- [ ] Detail any land use or planning constraints associated with site (e.g. land clearing and contouring).
- [ ] Report on suitability of location for intended fruit, vegetable or ornamental plant products/ processing agribusiness.

b. Site Infrastructure

- [ ] Explain area and on-site availability of public services (e.g. power, water, communications etc.)
- [ ] Provide details about any wells, streams and or irrigation facilities, windmills on-site.
- [ ] Explain transport access/egress (roads, bridges, etc.).
- [ ] Report on existing buildings as suited to the project (e.g. housing for staff; storage for chemicals and fertilizer, products etc., buildings for vehicles, workshops, machinery, stoves).
- [ ] Availability in-area or on-site, of products harvesting/processing facilities (e.g. grading, drying, chilling/freezing facilities, general storage, boxing and crating packaging, warehousing).

- [ ] Report on existing fencing or hedging for plant protection.
- [ ] Identify and draw up a list of infrastructure requirements (buildings, roads, materials etc.) for project establishment.
- [ ] Determine services requirements (power-Kwh ; water-gallons; gas-cubic meters; etc.) for agribusiness function.

c. Environmental Conditions

- [ ] Explain seasonal characteristics and variations.
- [ ] Report on amount and distribution rainfall and humidity through the year. (This should be available in printed form from the Ministry of Agriculture).
- [ ] Report on temperature ranges.
- [ ] Report on any significant variations in temperature and rainfall from year to year.
- [ ] Report on ground water tests- especially for salinity if the site is near the sea.
- [ ] Provide data on variations in length of daylight hours.
- [ ] Provide figures on site elevation.
- [ ] Provide information on propensity for natural disaster (i.e. hurricane, flooding, volcano eruption) which might effect your production site.
- [ ] Discuss and analyze information obtained about any prevailing significant insect problem (e.g. nematode infestation, thrips, etc.) in relation to the proposed crop.

(d) Soil Status

- [ ] Provide soil maps and/or profiles.
- [ ] Provide results of soil analysis from random core samples obtained on the growing site. Include information on texture, structure, porosity, soil Ph and availability of major nutrients in the soil.
- [ ] Identify and report on soil limitations and advantages pertaining to production of your crops.
- [ ] Discuss any known erosion problems and preventative measures required in relation to production of your crop.

2. Methods and Requirements for Fruit Vegetable or Ornamental Plant Production and/or Processing

(This section is extremely important. It describes in detail what your agribusiness will do.)

(a) Production Methods and Requirements

- [ ] Specify the species and variety(ies) chosen for the production. Explain why chosen. If possible make comparisons with other exotic and local varieties.
- [ ] Discuss adaptability (e.g. climate, disease resistance) of selected variety(ies) to local conditions under the growing system you will utilize.
- [ ] Provide a concise and convincing summary of the technical information which leads you to believe the species/variety(ies) can be successfully grown. Cite your sources; (i.e. your experience with or knowledge of successful demonstration plots, key technical articles and/or data, authoritative expert opinion, your own deductions etc.).



- [ ] Note any comparable local commercially successful operation currently growing this species/variety or cite operations in a similar environment.
- [ ] Explain your land preparation methods (e.g. clearing, leveling, terracing, fertilizing, soil fumigation etc.) Note equipment you will use and whether it will be owned or leased.
- [ ] Provide a production methodology flow chart and a conceptual sketch of the site layout and other buildings and stationary equipment to be used.
- [ ] Describe cropping patterns and if applicable crop mix.
- [ ] Describe how water requirements for your crop will be met (i.e. water catchment, well, trickle, pump or gravity fed, furrow irrigation etc.). Note equipment to be used.
- [ ] Describe source of primary growing material (e.g. seed, seedlings, cuttings) and where you will obtain it (e.g. on-site nursery, commercial seed etc.).
- [ ] Explain planting methods (e.g. broadcast, drilling, transplant) as well as spacing. Note the equipment to be used.
- [ ] Describe cultivation methods (e.g. raised beds, thinning, weeding, soil loosening, mulching etc.) Note equipment to be used.
- [ ] Describe your fertilizing program including materials and equipment to be used.
- [ ] Describe your plant protection program including the types of chemicals, plants (e.g. marigolds), screen cloth etc. to be utilized. Also note any equipment (e.g. back sprayers) to be used.
- [ ] Describe length of growing season to maturity/ripening. [ ]

- [ ] Describe harvesting methodology. Note equipment to be used.
  - [ ] Describe the labor input requirements and if possible make a labor schedule for each month from soil preparation through harvest. Discuss availability of labor (especially skilled labor if required) during seasonal peaks.
  - [ ] Analyze any potential for praedial larceny and describe any plans to minimize the threat.
  - [ ] Explain the anticipated characteristics of your crop vis-a-vis losses, number of harvest per year, yield per acre and gross yield.
  - [ ] Explain any field grading or harvest criteria.
- (b) Fruit, Vegetable or Ornamental Plant Processing  
(if the project goes beyond the sale of ungraded products you will need to address some or all the following points as applicable to your operation)
- [ ] Give a general description of the extent and/or limits of your product processing (e.g. grading, washing, boxing, packaging, cold storage, freezing, canning, pickling, drying, etc.)
  - [ ] Indicate if such processing is to be carried out under contract or do you plan vertically integrated (doing it as part of your own operation) facilities in addition to your production/ harvesting systems.
  - [ ] If selling fresh fruit, vegetables, live plants or cut flowers, describe the appropriate processing stages you plan to utilize for preparation or distribution and sale. (e.g. grading, washing, boxing, cutting, potting, spraying, packaging, cold, storing, labeling etc.)
  - [ ] If processing further, describe the appropriate processing stages required for conversion of the primary fruit and vegetable or flower products to the processed product stage.

- [ ] Justify the methods of processing recommended and planned, through personal experience deduction and/or references to established processes which are applicable. (Draw heavily on recommendations made by existing processors and the manufacturers and sellers of processing equipment. Many will be willing to provide you with printed data and descriptions of their equipment and its output.
- [ ] Supply specifications of processing equipment (brochures etc.) as an appendix to the report.
- [ ] Indicate volume of output per processed product per month for a year.
- [ ] Explain quality control requirements and methods during processing.
- [ ] Describe as applicable any health, hygiene and safety prophylactic measures and methods applicable to product processing.
- [ ] Explain any other requirements or plans which you consider important.

#### D. FINANCIAL ANALYSIS:

This is a guideline for a very simple financial analysis. For many projects, depending on their complexity and the amount of funds or source of funds which are sought, a more extensive financial analysis will be necessary. APPENDIX A describes briefly some standard financial calculations which may be requested from funding organizations for larger projects. Assistance in performing these calculations, if required, is generally available either from the funding organizations or development assistance organizations. At minimum, however, you will need to perform the analysis outlined below:

##### 1 Project Costs

- Determine the capital costs required to achieve 95% or more of production capacity in the first year.
- Determine the capital costs using the cost sheet as a guideline in selecting those items which are applicable.
- Determine your amortized capital cost by (1) estimating the most favorable terms which you can reasonably expect (the rate of interest and the number of years for repayment); (2) consult an interest amortization table to calculate monthly/annual repayment cost; (3) a 12 month total of this repayment of principle and interest gives you the amortized capital cost figure.
- Determine your operating costs using the cost sheet as a guideline in selecting those items which are applicable.
- Add the amortized capital cost to the annual operating cost for the total annual cost.
- Place the total annual cost figure against gross revenue per year for the simplest monetary cost/benefit ratio based on 95% production capacity.

##### NOTE:

The cost sheet follows on a separate page. You should develop a complete good copy of your work sheets as an appendix on which calculations for each cost and revenue source is presented in detail.

FRUIT AND VEGETABLE PROJECT COST SHEET

<u>Capital Costs</u> <u>Item</u>	<u>Cost</u>
Land, purchase, lease .....	
Land clearing and preparation.....	
Equipment, moveable (e.g. tractors, plows harrows discs, irrigating pipes, pumps, cultivators, forks, hoes, wheelbarrows, sprayers etc.).....	
Equipment, stationary (e.g. tube well submission pump, windmill etc.).....	
Buildings, storage, workshop, office etc.....	
Professional services, one time capital cost type (e.g. engineers, surveyors, well installation etc.).....	
	TOTAL _____

<u>Operating Costs (Annual)</u> <u>Item</u>	
Personnel (e.g. labor, tech. assistance etc.).....	
Employer contribution to personnel benefits.....	
Utilities.....	
Communications.....	
Seed and/or nursery stock.....	
Chemicals and fertilizers.....	
Fuel.....	
Other expendable supplies.....	
Taxes, licenses etc.....	
	TOTAL OPERATING COSTS _____

2. Project Outputs, Revenue Sources and Revenue

Whether the fruit, vegetable or plant products be primary or processed you need to develop an annual production and revenue plan within the constraints of three basic pieces of information you need to provide. (A one page table presenting this information is preferred.) These three are:

- (1) The quantity of each product - primary, processed or by product - which will be produced each year.
- (2) The anticipated revenue from each product for the year.
- (3) A statement of annual gross revenue return based on (1) & (2).

FRUITS AND VEGETABLE PROJECT REVENUE SHEET

<u>Item</u>	<u># Units</u>	<u>Unit Price</u>	<u>Total Item Revenue</u>
-------------	----------------	-------------------	---------------------------

Primary Product(s)

By-product(s)

Processed Product(s)

Other sources (i.e. lease  
of equipment, land, fees  
for service etc.)

TOTAL REVENUE \_\_\_\_\_

TOTAL PRODUCT COST \_\_\_\_\_

-57-

FRUITS AND VEGETABLES COST/REVENUE ESTIMATE

Cost Items

Amortized Capital Costs (capital cost divided by 10)

Annual Operating Cost

TOTAL ANNUAL COST \_\_\_\_\_

TOTAL REVENUE (all sources) \_\_\_\_\_

NET ANNUAL PROFIT/LOSS \_\_\_\_\_



## APPENDIX A

### BRIEF DESCRIPTION OF SELECTED STANDARD FINANCIAL CALCULATIONS

#### Cash Flow Analysis

Cash flow is the actual movement of cash within a business. Cash flow analysis is a simple exercise in which outflows (costs) are matched to inflows (income), and charted over a period of time to determine when the project generates sufficient revenues to cover its monthly operating expenses and therefore is no longer dependent on outside sources of funding. It is important to estimate all monthly costs and income as realistically as possible.

#### Present Value

Present value allows you to look at and place a value on costs and returns which occur at different times during the life of a project. This is necessary because a \$100.00 return today is worth more than a \$100.00 return next year. The sooner a benefit is received, the sooner it can be reinvested or consumed and the opposite is true for costs.

To calculate present value, or the difference between early and late returns and costs, the gross costs and benefits are added and the net benefit is then discounted by the prevailing interest rate that is available. To make this calculation, the particular year's net benefit is multiplied by the number supplied in the table of discount factors (see the last page of the appendix). Make sure you use the appropriate discount rate and correct factor for the year that the cost or benefit occurred.

#### Break-Even Analysis

Break-even analysis is used to determine the point at which a project will neither make a profit nor incur a loss. That point is expressed in either the total benefits exactly offset by total costs (fixed and variable); or in total units of production, the cost of which exactly equals the income derived by their sale.

Example:  $\text{Total Benefits} - \text{Total Costs} = 0$

#### Internal Rate of Return

Internal rate of return is a determination of what discount rate (interest rate) you would have to use to equate (equal zero) the discounted benefits and discounted costs. This is calculated through successive approximations using progressively higher interest rates until you hit or come close to zero.

### Cost/Benefit Analysis

Cost/benefit analysis is a ratio which compares the discounted gross benefits (returns) and discounted gross costs, or gross benefits divided by gross costs. This type of analysis is generally used for capital intensive projects and the ratio of a feasible or profitable project will be higher than one. As with internal rate of return, the benefits and costs are discounted according to the year in which they are accrued, using the discount factor total. Total discounted benefits and costs are then calculated and the benefits divided by the costs.

### Net Benefit

Net benefit is basically the total benefit minus total costs and is usually calculated for projects which are not highly capital intensive. Example: Total Benefits - Total Costs = Net Benefits

### Proforma Financial Statement

Proforma financial statement is a standard financial statement which shows how the actual operation of the project will turn out if certain assumptions are achieved.

### Economic Analysis

Economic analysis (as opposed to financial analysis) is a second broad method of assessing the value of a project. It differs from a financial analysis in that it includes what are termed social costs and benefits, which are benefits and costs that are felt by society as a whole. These are usually difficult and inexacting because you become involved in attempting to calculate the value of such things as decreasing child mortality due to improved nutrition. We suggest that these types of calculations not be addressed unless specifically asked for by a funding organization.

### Beneficiaries Statement

Beneficiaries are usually categorized as primary and secondary with the primary group being composed of those directly affected by a project. These individuals, for example, would include members, their families, and employees of a cooperation which was being assisted. Secondary beneficiaries would include individuals who benefit from a project because of sub-industries which develop. An example of this would be fertilizer and seed companies who supply inputs to the cooperative.

These figures are of great interest to funding organizations who supply soft loans and grants.

APPENDIX I

Bibliographic References

List references in sequence by number as they are referred to in the report. Identify by title of the published information, author, other publication information and date.

eg: 1. "High Yield Tomatoes For The Tropics", Sam McGee, Alaskan  
Journal of Tropical Vegetable Production, Nome, 1982

APPENDIX II

Include all important supporting data which needs to be available, but which would not be appropriate in the body of your assessment (e.g. because it would interrupt the smooth flow of the assessment). Usually such items as extensive statistical data, itemized cost calculations, equipment brochures, blueprints etc. would be included.

12.00%

Table 1

## MONTHLY

PAYMENT REQUIRED TO AMORTIZE A LOAN

TERM AMOUNT	1 YEAR	2 YEARS	3 YEARS	4 YEARS	5 YEARS	6 YEARS	7 YEARS	8 YEARS	9 YEARS	10 YEARS	11 YEARS	12 YEARS
100	4.45	2.54	1.67	1.32	1.12	.96	.89	.82	.76	.72	.69	.66
200	8.89	4.71	3.33	2.64	2.23	1.91	1.77	1.63	1.52	1.44	1.37	1.32
300	13.77	7.42	5.45	4.57	4.05	3.62	3.54	3.26	3.04	2.87	2.74	2.63
400	18.64	10.15	7.97	7.11	6.40	5.87	5.30	4.88	4.54	4.31	4.11	3.95
500	23.54	13.03	10.29	9.24	8.30	7.63	7.07	6.51	6.08	5.74	5.48	5.26
600	28.43	15.94	12.81	11.51	10.35	9.40	8.83	8.15	7.60	7.18	6.84	6.57
700	33.31	18.85	15.39	13.91	12.55	11.39	10.72	9.93	9.26	8.81	8.41	8.09
800	38.19	21.76	17.92	16.24	14.69	13.33	12.56	11.67	10.90	10.35	9.95	9.60
900	43.07	24.67	20.49	18.61	16.95	15.39	14.52	13.53	12.76	12.11	11.69	11.31
1000	47.95	27.58	23.01	20.93	19.17	17.51	16.54	15.45	14.68	13.93	13.41	13.00
1100	52.83	30.49	25.53	23.25	21.39	19.63	18.56	17.37	16.60	15.85	15.33	14.91
1200	57.71	33.40	28.05	25.59	23.65	21.79	20.72	19.43	18.66	17.91	17.39	16.96
1300	62.59	36.31	30.57	27.95	25.91	24.01	22.94	21.55	20.78	19.93	19.41	18.98
1400	67.47	39.22	33.09	30.31	28.17	26.27	25.20	23.81	23.04	22.19	21.67	21.24
1500	72.35	42.13	35.61	32.65	30.43	28.49	27.42	26.03	25.26	24.41	23.89	23.46
1600	77.23	45.04	38.13	34.99	32.69	30.75	29.68	28.29	27.52	26.67	26.15	25.72
1700	82.11	47.95	40.65	37.33	34.95	33.01	31.94	30.55	29.78	28.93	28.41	27.98
1800	86.99	50.86	43.17	39.67	37.21	35.27	34.20	32.81	32.04	31.19	30.67	30.24
1900	91.87	53.77	45.69	41.99	39.47	37.49	36.42	35.03	34.26	33.41	32.89	32.46
2000	96.75	56.68	48.21	44.31	41.73	39.75	38.68	37.29	36.52	35.67	35.15	34.72
2100	101.63	59.59	50.73	46.63	43.99	41.99	40.92	39.53	38.76	37.91	37.39	36.96
2200	106.51	62.50	53.25	48.95	46.25	44.25	43.18	41.79	41.02	40.17	39.65	39.22
2300	111.39	65.41	55.77	51.27	48.51	46.51	45.44	44.05	43.28	42.43	41.91	41.48
2400	116.27	68.32	58.29	53.59	50.77	48.77	47.70	46.31	45.54	44.69	44.17	43.74
2500	121.15	71.23	60.81	55.91	53.03	51.03	50.00	48.61	47.84	46.99	46.47	46.04
2600	126.03	74.14	63.33	58.23	55.29	53.29	52.26	50.87	50.10	49.25	48.73	48.30
2700	130.91	77.05	65.85	60.55	57.55	55.55	54.52	53.13	52.36	51.51	50.99	50.56
2800	135.79	79.96	68.37	62.87	59.81	57.81	56.78	55.39	54.62	53.77	53.25	52.82
2900	140.67	82.87	70.89	65.19	62.07	60.07	59.04	57.65	56.88	56.03	55.51	55.08
3000	145.55	85.78	73.41	67.51	64.33	62.33	61.30	59.91	59.14	58.29	57.77	57.34
3100	150.43	88.69	75.93	69.83	66.59	64.59	63.56	62.17	61.40	60.55	60.03	59.60
3200	155.31	91.60	78.45	72.15	68.85	66.85	65.82	64.43	63.66	62.81	62.29	61.86
3300	160.19	94.51	80.97	74.47	71.11	69.11	68.08	66.69	65.92	65.07	64.55	64.12
3400	165.07	97.42	83.49	76.79	73.37	71.37	70.34	68.95	68.18	67.33	66.81	66.38
3500	169.95	100.33	86.01	79.11	75.63	73.63	72.60	71.21	70.44	69.59	69.07	68.64
3600	174.83	103.24	88.53	81.43	77.89	75.89	74.86	73.47	72.70	71.85	71.33	70.90
3700	179.71	106.15	91.05	83.75	80.15	78.15	77.12	75.73	74.96	74.11	73.59	73.16
3800	184.59	109.06	93.57	86.07	82.41	80.41	79.38	78.00	77.23	76.38	75.86	75.43
3900	189.47	111.97	96.09	88.39	84.67	82.67	81.64	80.25	79.48	78.63	78.11	77.68
4000	194.35	114.88	98.61	90.71	86.93	84.93	83.90	82.51	81.74	80.89	80.37	79.94
4100	199.23	117.79	101.13	93.03	89.19	87.19	86.16	84.77	84.00	83.15	82.63	82.20
4200	204.11	120.70	103.65	95.35	91.45	89.45	88.42	87.03	86.26	85.41	84.89	84.46
4300	208.99	123.61	106.17	97.67	93.71	91.71	90.68	89.29	88.52	87.67	87.15	86.72
4400	213.87	126.52	108.69	99.99	95.97	93.97	92.94	91.55	90.78	89.93	89.41	88.98
4500	218.75	129.43	111.21	102.31	98.23	96.23	95.20	93.81	93.04	92.19	91.67	91.24
4600	223.63	132.34	113.73	104.63	100.49	98.49	97.46	96.07	95.30	94.45	93.93	93.50
4700	228.51	135.25	116.25	106.95	102.75	100.75	99.72	98.33	97.56	96.71	96.19	95.76
4800	233.39	138.16	118.77	109.27	105.01	103.01	101.98	100.59	99.82	98.97	98.45	98.02
4900	238.27	141.07	121.29	111.59	107.27	105.27	104.24	102.85	102.08	101.23	100.71	100.28
5000	243.15	143.98	123.81	113.91	109.53	107.53	106.50	105.11	104.34	103.49	102.97	102.54
5100	248.03	146.89	126.33	116.23	111.79	109.79	108.76	107.37	106.60	105.75	105.23	104.80
5200	252.91	149.80	128.85	118.55	114.05	112.05	111.02	109.63	108.86	107.91	107.39	106.96
5300	257.79	152.71	131.37	120.87	116.31	114.31	113.28	111.89	111.12	110.27	109.75	109.32
5400	262.67	155.62	133.89	123.19	118.57	116.57	115.54	114.15	113.38	112.53	112.01	111.58
5500	267.55	158.53	136.41	125.51	120.83	118.83	117.80	116.41	115.64	114.79	114.27	113.84
5600	272.43	161.44	138.93	127.83	123.09	121.09	120.06	118.67	117.90	117.05	116.53	116.10
5700	277.31	164.35	141.45	130.15	125.35	123.35	122.32	120.93	120.16	119.31	118.79	118.36
5800	282.19	167.26	143.97	132.47	127.61	125.61	124.58	123.19	122.42	121.57	121.05	120.62
5900	287.07	170.17	146.49	134.79	129.87	127.87	126.84	125.45	124.68	123.83	123.31	122.88
6000	291.95	173.08	149.01	137.11	132.13	130.13	129.10	127.71	126.94	126.09	125.57	125.14
6100	296.83	175.99	151.53	139.43	134.39	132.39	131.36	129.97	129.20	128.35	127.83	127.40
6200	301.71	178.90	154.05	141.75	136.65	134.65	133.62	132.23	131.46	130.61	130.09	129.66
6300	306.59	181.81	156.57	144.07	138.91	136.91	135.88	134.49	133.72	132.87	132.35	131.92
6400	311.47	184.72	159.09	146.39	141.17	139.17	138.14	136.75	135.98	135.13	134.61	134.18
6500	316.35	187.63	161.61	148.71	143.43	141.43	140.40	139.01	138.24	137.39	136.87	136.44
6600	321.23	190.54	164.13	151.03	145.69	143.69	142.66	141.27	140.50	139.65	139.13	138.70
6700	326.11	193.45	166.65	153.35	147.95	145.95	144.92	143.53	142.76	141.91	141.39	140.96
6800	330.99	196.36	169.17	155.67	150.21	148.21	147.18	145.79	145.02	144.17	143.65	143.22
6900	335.87	199.27	171.69	157.99	152.47	150.47	149.44	148.05	147.28	146.43	145.91	145.48
7000	340.75	202.18	174.21	160.31	154.73	152.73	151.70	150.31	149.54	148.69	148.17	147.74
7100	345.63	205.09	176.73	162.63	156.99	154.99	153.96	152.57	151.80	150.95	150.43	150.00
7200	350.51	208.00	179.25	164.95	159.25	157.25	156.22	154.83	154.06	153.21	152.69	152.26
7300	355.39	210.91	181.77	167.27	161.51	159.51	158.48	157.09	156.32	155.47	154.95	154.52
7400	360.27	213.82	184.29	169.59	163.77	161.77	160.74	159.35	158.58	157.73	157.21	156.78
7500	365.15	216.73	186.81	171.91	166.03	164.03	163.00	161.61	160.84	160.00	159.48	159.05
7600	370.03	219.64	189.33	174.23	168.29	166.29	165.26	163.87	163.10	162.25	161.73	161.30
7700	374.91	222.55	191.85	176.55	170.55	168.55	167.52	166.13	165.36	164.51	163.99	163.56
7800	379.79	225.46	194.37	178.87	172.81	170.81	169.78	168.39	167.62	166.77	166.25	165.82
7900	384.67	228.37	196.89	181.19	175.07	173.07	172.04	170.65	169.88	169.03	168.51	168.08
8000	389.55	231.28	199.41	183.51	177.33	175.33	174.30	172.91	172.14	171.29	170.77	170.34
8100	394.43	234.19	201.93	185.83	179.59	177.59	176.56	175.17	174.40	173.55	173.03	172.60
8200	399.31	237.10	204.45	188.15	181.85	179.85	178.82	177.43	176.66	175.81	175.29	174.86
8300	404.19	240.01	206.97	190.47	184.11	182.11	181.08	179.69	178.92	178.07	177.55	177.12
8400	409.07	242.92	209.49	192.79	186.37	184.37	183.34	181.95	181.18	180.33	179.81	179.38
8500	413.95	245.83	212.01	195.11	188.63	186.63	185.60	184.21	183.44	182.59	182.07	181.64
8600	418.83	248.74	214.53	197.43	190.89	188.89	187.86	186.47	185.70	184.85	184.33	183.90
8700	423.71	251.65	217.05	199.75	193.15	191.15	190.12	188.73	187.96	187.11	186.59</	

DISCOUNT FACTORS OR PRESENT VALUE OF \$1.00 AT INTEREST RATES FROM 3% to 40%.

	Interest Rate										$1/(1+g)^n$
	(Discount Rate)										
Year	3%	4%	5%	6%	7%	8%	10%	12%	15%	20%	
1	.971	.962	.952	.943	.935	.926	.909	.893	.870	.833	
2	.943	.925	.907	.890	.873	.857	.826	.797	.756	.694	
3	.915	.889	.864	.840	.816	.794	.751	.712	.658	.579	
4	.888	.855	.823	.792	.763	.735	.683	.636	.572	.482	
5	.863	.822	.784	.747	.713	.681	.621	.567	.497	.402	
6	.838	.790	.746	.705	.666	.630	.564	.507	.432	.335	
7	.813	.760	.711	.665	.623	.584	.513	.452	.376	.279	
8	.789	.731	.677	.627	.582	.540	.466	.404	.327	.233	
9	.766	.703	.645	.592	.544	.500	.424	.361	.284	.194	
10	.744	.676	.614	.558	.508	.463	.386	.322	.247	.162	
11	.722	.650	.585	.527	.475	.429	.350	.288	.215	.135	
12	.701	.625	.557	.497	.444	.397	.319	.257	.187	.112	
13	.681	.601	.530	.469	.415	.368	.290	.229	.162	.094	
14	.661	.578	.505	.442	.388	.340	.263	.205	.141	.078	
15	.642	.555	.481	.417	.362	.315	.239	.183	.123	.065	
16	.623	.534	.458	.394	.339	.292	.218	.163	.107	.054	
17	.605	.513	.436	.371	.317	.270	.198	.146	.093	.045	
18	.587	.494	.416	.350	.296	.250	.180	.130	.081	.038	
19	.570	.475	.396	.330	.276	.232	.164	.116	.070	.031	
20	.554	.456	.377	.312	.258	.214	.149	.104	.061	.026	
	25%	30%	35%	40%	45%	50%	55%	60%			
1	.800	.769	.741	.714	.690	.667	.645	.625			
2	.640	.592	.549	.510	.476	.444	.416	.391			
3	.512	.455	.406	.364	.328	.296	.268	.244			
4	.410	.350	.301	.260	.226	.198	.173	.153			
5	.328	.269	.223	.186	.156	.132	.112	.095			
6	.262	.207	.165	.133	.108	.088	.072	.060			
7	.210	.159	.122	.095	.074	.058	.046	.037			
8	.168	.123	.091	.068	.051	.039	.030	.023			
9	.134	.094	.067	.048	.035	.026	.019	.015			
10	.107	.072	.050	.035	.024	.017	.012	.009			
11	.086	.056	.037	.025							
12	.069	.043	.027	.018							
13	.055	.033	.020	.013							
14	.044	.025	.015	.009							
15	.035	.020	.011	.006							
16	.028	.015	.008	.005							
17	.022	.012	.006	.003							
18	.018	.009	.004	.002							
19	.014	.007	.003	.002							
20	.012	.005	.002	.001							

The period of analysis is normally one year. However, any time period could be used as long as you are consistent. This discount table is for one year periods. For practical purposes, it is unimportant whether the discounting is done at mid-year or on a year-end basis. Most international lending agencies now use the year-end procedure.

The period of analysis is normally one year. However, any time period could be used as long as you are consistent. This discount table is for one year periods. For practical purposes it is unimportant whether the discounting is done at mid-year or on a year-end basis. Most international lending agencies now use the year-end procedure.